Please amend the claims to read as follows.

1. (Six Times Amended) A router for distributing packets in a network, wherein the

packets originate at a source and are routed to a destination, comprising:

a plurality of route processing engines located within said router;

a mechanism that performs a hashing function on a destination address portion of a

network layer in the packets transferred to the routing system, to produce an indicia of a flow

and,

means for switching packets with a same said indicia of a flow to a single route proc-

essing engine of said plurality of route processing engines.

11. (Five Times Amended) A router for distributing packets in a network, wherein

the packets originate at a source and are routed to a destination, comprising:

a plurality of network interfaces that transfer the packets to said destination and from

said source;

a plurality of route processing engines located within said router;

a fabric interconnecting said plurality of network interfaces and said plurality of route

processing engines;

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8   a hashing function to hash a destination address of a packet to determine a distribu-

9   tion of the packets by said fabric, in response to an output of said hashing function, among

10   said plurality of route processing engines.

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17.   (Thrice Amended)   A method, in a router, for selecting one processing engine of a

2   plurality of processing engines located within the router for processing at least one packet,

3   the method comprising the steps of:

4   hashing a destination address portion of a network layer of at least one packet to de-

5   termine a hash result, said hash result indicating a flow;

6   selecting one processing engine of said plurality of processing engines located within

7   said router to process the flow indicated by said hash result.

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26.   (Thrice Amended)   A system, in a router, for selecting one processing engine of a

2   plurality of processing engines located within said router for processing at least one packet,

3   the system comprising:

4   means for hashing a destination address of a network layer of the at least one packet

5   to obtain a hash result; and

6   means, responsive to said hash result, for selecting said one processing engine of said

7   plurality of processing engines located within said router to preserve a packet flow indicated

8   by said destination address.

44.   (Twice Amended)   A routing system for distributing packets in a network, wherein

the packets originate at a source and are routed to a destination, both source and destination

external with respect to the routing system, comprising:

    a plurality of network interfaces that transfer packets to said destination and from said

source;

    a plurality of route processing engines;

    a hash mechanism that performs a hashing function on a destination address portion

of a network layer of a particular packet, in the packets transferred to the routing system, to

determine a distribution of the packets to the route processing engines for processing by the

engines, and said hash mechanism producing a hash result giving an indication of a flow of

said particular packet so that packets of a flow are switched to the same route processing en-

gine of said plurality of route processing engines.

45.   (Twice Amended)   A router, comprising:

    a plurality of processing engines located within said router for processing packets;

    an interface for receiving a received packet from a network;

4   a data compiler to perform a hash function on a destination address of said received

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5   packet to generate a hash result, and to select a selected processing engine from said plurality

6   of processing engines located within said router in response to said hash result; and,

7   a switch to distribute said packet to said selected processing engine.

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1   70. (Amended) A router, comprising:

2   a plurality of processing engines located within said router for processing packets;

3   an interface for receiving a received packet from a network;

4   means for performing a hash function calculation on a destination address of said re-

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5   ceived packet to produce a hash result; and,

6   means, responsive to said hash result, for switching said received packet to a proc-

7   essing engine selected from said plurality of processing engines located within said router for

8   further processing of said received packet.

1   71. (Amended) A method of processing packets in a router, comprising:

2   receiving a packet from a network;

3   performing a hash function calculation on a destination address of said packet to pro-

4   duce a hash result; and,

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5 switching, in response to said hash result, said packet to a processing engine of a plu-

6 rality of processing engines in said router, for further processing of said packet.

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85. (Amended) A router, comprising:

2 a plurality of processing engines located within said router for processing packets;

3 an interface for receiving a packet from a network, said packet referred to as a re-

4 ceived packet;

5 a hashing function to perform a hash calculation on a destination address of said

6 packet, said hash calculation producing a hash result;

7 a data compiler to determine a type of service required by said received packet; and,

8 a switch, responsive to said type of service and responsive to said hash result, to dis-

9 tribute said packet to a selected processing engine of said plurality of processing engines lo-

10 cated within said router, said selected processing engine providing said type of service.

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90. (Amended) A method of processing packets in a router, comprising:

2 receiving a packet from a network, referred to as a received packet;

3 hashing a destination address of said received packet to obtain a hash result;

4 determining a type of service required by said received packet; and,

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to
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5   distributing, in response to said type of service and in response to said hash result,

6   said received packet to a selected processing engine located within said router, said selected

7   processing engine providing said type of service.